

## Part A: Graphing Quadratics and Finding Key Features [F-IF.4]

1. **Select** true or false for each statement.

A) The line of symmetry for  $f(x)$  is  $x = -1$ .

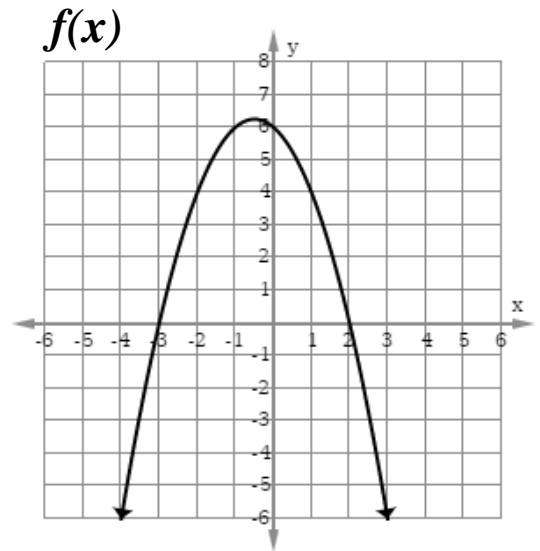
True                  False

B) The maximum y-value of  $f(x)$  is less than the minimum y-value of the function  $g(x) = (x+1)^2 + 7$ .

True                  False

C)  $f(x)$  has two x-intercepts.

True                  False



2. **Find** the domain and range for the function. **Explain** your reasoning.

$$h(x) = -2(x-3)^2$$

3. **Select** the value of  $d$  that would result in the function  $g(x) = x^2 + dx + 4$  having only one x-intercept. **Explain** your reasoning.

A) 0                  B) 1

C) 4                  D) 16

## Part B: Transformations with Quadratics [F-BF.3]

4. **Graph** the function  $f(x) = (x-3)^2 - 1$ . **Translate** the function 6 units left.

Part C: Solving Quadratics & The Quadratic Formula [A-REI.4b]

5. **Solve** the equation, showing your work.

A)  $2x^2 - 50 = 0$

B)  $13x^2 - 49 = 0$

C)  $x^2 - 12x + 20 = 0$

D)  $x^2 + 6x + 10 = 0$

6. **Select** any equations with no real solutions. **Justify** your reasoning.

A)  $x^2 + 4x + 4 = 0$

B)  $x^2 + 5x + 1 = 0$

C)  $x^2 + 2x + 7$

Part D: Modeling with Quadratics [A-SSE.3a, A-SSE.3b]

7. **Sketch** a graph that represents the height of a stone above the ground in meters,  $y$ , with respect to time in seconds,  $x$ , after it has been thrown straight up into the air. **Explain** the key features of the graph.